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**Human Needs:
A Literature Review
and Cognitive Life Span Model**



**Paul Rosenfeld
Amy L. Culbertson
Paul Magnusson**

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A Literature Review and Cognitive Life Span Model**

**Paul Rosenfeld
Amy L. Culbertson
Paul Magnusson**

**Reviewed by
Joyce Shettel-Neuber**

**Approved and released by
Richard C. Sorenson
Technical Director (Acting)**

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| Five major needs theories are reviewed. Maslow's Hierarchy of Needs, Alderfer's ERG Theory, Murray's Manifest Needs Theory, McClelland and Atkinson's Need for Achievement Theory, and Herzberg's Two-factor Theory. It is concluded that no single theory of human needs can adequately account for the full range of human motivations and behaviors. Furthermore, needs theories are only one class of theories of motivation. A cognitive life span model of needs is proposed and its applicability to Navy settings described. | | | |
| The cognitive life span model proposes that needs are abstract categories or schemas by which people organize their perceptions related to physiological and psychological states. The life span developmental perspective suggests that needs also change in importance throughout the life span. Given the lock-step nature of career progression in the Navy, the model may prove useful in applications to Navy settings. | | | |
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Foreword

This report reviews theories of human needs and offers a cognitive life span model, which may be applicable to Navy quality of life programs and policies.

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RICHARD C. SORENSEN
Technical Director (Acting)

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Summary

Introduction

A number of theories have been proposed regarding human motivation--the area of psychology concerned with what propels, energizes, drives, and maintains behavior. One view is that people seek to satisfy *needs*, either physical or psychological. Needs are deficiencies that people experience at some point in time; these deficiencies are viewed as arousing and as motivating behaviors to satisfy them.

Purpose

Because it is the aim of many quality of life programs to address human needs in areas such as safety, security, leisure, etc., a thorough review of theories of human needs would be useful to quality of life program managers, resource allocators, and program evaluators. This report reviews major theories of human needs and proposes a cognitive life span model, which may be applicable to Navy quality of life programs and policies.

Needs Theories: A Review

Five major needs theories are reviewed. *Maslow's Needs-Hierarchy Theory* maintains that people must first satisfy basic needs (physiological, safety) before they are motivated to grow and reach their fullest potential. *Alderfer's ERG Theory* posits, as Maslow did, that needs are hierarchically ordered, but Alderfer felt that there are three (existence, relatedness, and growth) rather than five basic needs categories. According to *Murray's Manifest Needs Theory*, needs may be manifest or latent. Manifest needs are active and related to actual behavior. Latent needs are inhibited, private, and imagined. *McClelland and Atkinson's Need for Achievement Theory* proposes that the need for achievement (n_{Ach})--a need to excel in relation to competitive or internalized standards--underlies much human behavior. *Herzberg's Two-factor Theory* sees two needs or factors--hygienes and motivators--being related to job satisfaction or dissatisfaction.

Needs Theories: An Evaluation

It is clear that individuals have needs and that these needs are related to how they act. However, no single theory of human needs can adequately account for the full range of human motivations. Furthermore, needs theories are only one class of theories of motivation. Currently, the more popular theories of human motivation are cognitive (e.g., equity, expectancy, goal setting), which emphasize the role of thought and conscious choices in motivation.

A Cognitive Theory of Human Needs

The cognitive model sees humans as active information processors in a world cluttered with information. Because there simply is too much information to process and because the human cognitive system is limited, people are "cognitive misers"; they take mental shortcuts that help them organize the world and react to it quickly. It is proposed that needs are collections of related stimuli grouped around a common theme that typically guide behavior in areas related to satisfaction (physiological processes; relationships with others, etc.).

Life Span Developmental Theories

Although the theories reviewed provide a framework for understanding human needs, they fail to address how needs change across the life span.

Life span developmental psychologists (e.g., Erikson, Levinson) have proposed that personality develops through a series of life stages where crises are met, and, if favorably resolved, result in personality growth marked by changing goals and rethinking of current behaviors. A life span developmental perspective suggests that needs also change in importance throughout the life span.

A Cognitive Life Span Model of Needs

An integration of the needs, cognitive, and life span approaches is offered. It is postulated that needs are created from within rather than without, and that needs are abstract categories or schemas by which people organize their perceptions related to physiological and psychological states. While there are no universal need states that inevitably emerge, there is a component of the model--age, which provides the universal influence on the type of needs categories. These life stages influence thought processes and the categories or need schemas that are formed. Life stage may also serve to "prime" or activate previously developed need schemas. Once formed and primed, these need schemas guide behavior. Things related to and supportive of a schema are rapidly processed and remembered and things divergent and counter to a schema are often overlooked and not well remembered.

Assumptions of the Model

This model leads to the following set of assumptions:

1. Needs are categories or schemas that individuals create to simplify, organize, and guide their experiences in areas related to satisfaction.
2. Needs may be formed along several dimensions--physiological, psychological, or spiritual. Once formed they guide behavior.
3. Because thinking and information processing are affected by environmental factors, need schemas will be influenced by the social environment of childhood and the present environment.
4. A major environmental/external factor affecting need schemas is life span. The inevitable and predictable challenges and opportunities faced by individuals as they age will serve to create similar need schemas among individuals at that life stage.
5. The more similar the career progression found in an organization the more similar the need schemas formed.
6. In structured, hierarchical, lock-step organizations, individual (e.g., race, gender, socioeconomic background) and occupational (e.g., rating, specialty) differences will have a greater influence on need schemas early in career progression rather than later.

Applications of the Cognitive Life Span Model to Navy Personnel

1. A cognitive life span model will be more applicable to Navy settings than to less structured organizations. The Navy's unique environment, with similarities in ordering of experiences, relatively lock-step nature of career advancement, and a common set of rules and culture, will shape cognitions. Similar cognitions will lead to similar need schemas.
2. Life stage in the Navy will play a more important role than individual differences, especially among senior personnel.
3. The needs of senior Navy personnel are different from junior personnel, but may also have important organizational consequences. As with junior personnel, if the needs of senior personnel are not met, there may be adverse impact on crucial Navy outcomes (e.g., performance, readiness, retention).

Recommendations for Applications of the Cognitive Life Span Model to Navy Quality of Life Settings

1. To determine whether a person's quality of life needs are being met, one must first identify what that person's cognitive categories for quality of life needs are. Thus, specific Navy quality of life needs should be determined through empirical research.
2. Needs should be measured at major life stages because universal stage-related changes have influence on the formation of needs schemas. These empirically derived needs should be used to develop a taxonomy of needs tied to Navy life.
3. The empirically derived needs taxonomy should be used as the basis for assessing how well the Navy helps its personnel meet their quality of life needs. The extent to which the Navy supports meeting quality of life needs in different life stages is hypothesized to be related to outcome variables such as retention, readiness, and performance.

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Introduction

Psychologists who study human behavior have struggled with understanding the underlying causes or determinants of behavior. In seeking to answer questions regarding why people do what they do, a number of theories have been proposed regarding human motivation--the area of psychology concerned with what propels, energizes, drives, and maintains behavior (Landy & Becker, 1987; Latham, 1988; Pinder, 1984).

For many years, a common reply given by psychologists to the question "what makes people act the way they do?" was that they are seeking to satisfy a need, either physical or psychological. Human behavior was seen as serving the purpose of satisfying the demands of internal needs (Pinder, 1984). Needs were deficiencies that people experienced at some point in time; these deficiencies were viewed as arousing and motivating behaviors to satisfy them (Gibson, Ivancevich & Donnelly, 1985; Mitchell, 1982).

Purpose

While needs theories have been applied in organizational settings to areas such as work motivation (Landy & Becker, 1987) they have not, to our knowledge, been reviewed for possible application to the area of quality of life. Because it is the aim of many quality of life programs to address human needs in areas such as safety, security, leisure, etc., a thorough review of theories of human needs would be useful to quality of life program managers, resource allocators, and program evaluators.

This report will examine the concept of needs and distinguish it from related constructs in motivation theory. Subsequently, five major theories of human needs will be reviewed. Shortcomings in these theories will lead to a review of related theories of cognition and of adult development as they apply to human needs. Finally, a cognitive life span model will be proposed, and suggestions for application to the Navy setting will be provided.

Definition of Terms

Needs

In their summary and comparison of the major theories of motivation, Steers and Porter (1979) note, "The individual characteristic that has received the most widespread attention in terms of motivation theory and research is the concept of 'needs.' A need may be defined as an internal state of disequilibrium, which causes individuals to pursue certain courses of action in an effort to regain internal equilibrium" (p. 22). Gibson et al. (1985) offer a complementary and more detailed definition: "Needs refer to deficiencies that an individual experiences at a particular point in time. The deficiencies may be physiological (e.g., a need for food), psychological (e.g., a need for self-esteem), or sociological (e.g., a need for social interaction). Needs are viewed as energizers or triggers of behavioral responses" (pp. 100-101). Zimbardo (1988) points out that not everyone subscribes to the same view, however: "Some, for example, prefer to use the term need only in connection with biological demands (the body's need for water). Others think need is appropriate in discussing psychological requirements also (the need for achievement)" (p. 376). Our approach

will adopt this expanded view of needs as involving both biological and psychological components.

Drives

Drives follow from needs. According to Bootzin, Bower, Crocker, and Hall (1991), a drive is a state “resulting from physiological deficits or a need that instigates behavior to reduce that need” (p. 377). A need becomes a drive when an individual’s energy has been triggered to satisfy it.

Drives are categorized by drive-reduction theorists into two types: *primary* drives, which are based on physiological needs such as hunger and thirst, and *secondary* drives, which are tied to primary drives and are learned or acquired from their association with primary drives (Bootzin et al., 1991). An example of a secondary drive is wanting money when you are hungry because money can be used to buy food. The term *motive* is sometimes used in place of secondary drive (Zimbardo, 1988).

Motivation

Psychologists have traditionally considered motivation as closely related to and following from drives. Despite the centrality of the concept of motivation, there is disagreement over its definition. Landy and Becker (1987) note that reviews of the literature have found over 140 definitions of motivation. Despite these many definitions, “There is general agreement that motivated behavior consists of any or all of the following behavioral elements: initiation, direction, persistence, intensity, and termination” (Landy & Becker, 1987, p. 5). Adopting a succinct definition seems appropriate for the purposes of this report: “Motivation [means] the processes that, taken together, energize, maintain, and direct behavior toward goals” (Bootzin et al., 1991, p. 376).

Goals

As our adopted definition of motivation indicates, goals are the objects or targets for actions that stem from motivation. They represent the results that an individual is trying to obtain.

Needs Theories: A Review

The constructs of needs, drives, motivation, and goals have been incorporated into theories which attempt to explain the underlying causes of behavior. These *needs theories* are one way of explaining human motivation. Five major needs theories are reviewed in the following paragraphs.

Maslow's Hierarchy of Needs

Maslow (1954, 1968) proposed an influential *needs-hierarchy theory*, which maintained that people can control their behavior and are motivated to grow and reach their fullest potential after satisfying more basic needs.

Maslow's theory has been called a “fulfillment model” where internal needs motivate individuals to engage in behaviors to satisfy them and eventually to reach their full potential (Pinder, 1984). Although Maslow's needs-hierarchy theory is based on a clinical/personality framework, it became widely popular as a theory of organizational work motivation. Work was

seen as a place where two of Maslow's major needs categories--self-esteem and self-actualization--could be realized (Spence & Helmreich, 1983). Maslow's needs hierarchy model was so widely accepted in business schools during the last 40 years that research testing it was almost an afterthought (Latham, 1988). Today, Maslow's contention that there are five categories of human needs and that they are hierarchically ordered has fallen out of favor because research failed to support its tenets.

Maslow claimed that humans are motivated to satisfy the following universal set of five needs.

1. **Physiological Needs:** These are basic physiological imperatives related to eating, drinking, sex, etc.
2. **Safety Needs:** People need to feel safe and secure from fear, harm, and threats to their existence.
3. **Belongingness Needs:** These include the need for friends and to be accepted by others.
4. **Esteem Needs:** People need to maintain a positive self-image and have their efforts recognized and appreciated by others.
5. **Self-actualization:** The highest, most fleeting, human need relates to being all that one can be and reaching one's full potential (Steers & Porter, 1979).

Maslow's needs are hierarchically ordered. He contended that a person must first satisfy basic needs before becoming motivated to satisfy the next highest level. Deprivation of one level of needs results in their becoming dominant. The satisfaction of this dominant level makes it weaker and activates the next highest level. This cycle continues until a person reaches self-actualization, which becomes more rather than less important as it is gratified (Wahba & Bridwell, 1973).

The needs hierarchy illustrates Maslow's contention that basic physiological needs have to be satisfied before psychological ones come into play. When basic needs are satisfied, the chief concern becomes satisfying psychological needs such as love and approval by others (Steers & Porter, 1979). The highest human need, self-actualization, becomes the primary motivator of behavior when all other needs have been fulfilled. A self-actualized person is discovering, expressing, and developing his/her true self (Rosenfeld, 1988).

Although Maslow's needs hierarchy theory has much intuitive appeal and has enjoyed widespread popularity in clinical, educational, and organizational settings, there is little research evidence supporting its validity (Wahba & Bridwell, 1973). As Arkes and Garske (1982, p. 133) note, "the theory appears to have immense practical utility but very little scientific credibility." Although there is some evidence that physiological and "other" needs exist in a dichotomy (Gibson et al., 1985) and that managers' needs for security decrease and needs for social interaction, achievement, and self-actualization increase as they advance in organizations (Porter, 1963), overall there is little support for the validity of the Maslow model in organizational settings. Furthermore, constructs such as self-actualization are hard to study scientifically, leading to doubts about whether this need is as universal as Maslow claimed (Gibson et al., 1985).

Wahba and Bridwell (1973) describe a series of studies using factor analysis to test the validity of Maslow's model. Factor analysis is a statistical technique that can assess how well variables cluster together to form common dimensions. In summarizing the research literature on Maslow's hierarchy, Wahba and Bridwell note that many studies do not support Maslow's model. Even those studies reporting that lower and higher needs cluster together have found that these clusters are not linked in a hierarchy but appear to be independent of each other. Self-actualization needs have sometimes been found to be independent of other needs and sometimes overlap with them. They conclude, "there is no clear evidence that human needs are classified into five distinct categories, or that these categories are structured in a special hierarchy" (p. 50).

The findings of Hall and Nougaim (1968), who tested Maslow's contention that the satisfaction of lower needs leads to an increase in the strength of higher needs, also failed to support his theory. Similarly, Lawler and Suttle (1972) had 187 lower-level managers from two organizations (a government organization and an agency that operates retail department stores) complete measures of need satisfaction and need importance. Follow-ups were conducted at 6 and 12 months. Lawler and Suttle found no support for Maslow's claim that needs are arranged in a hierarchy. Also, the importance of a need did not decrease as it was satisfied. At best, Lawler and Suttle conclude, needs exist in a two-level hierarchy--with basic physiological needs followed by all the others.

In sum, although Maslow's needs hierarchy theory has much intuitive appeal, it is not accepted as a valid model for human behavior. Pinder (1984) makes this point clearly: "In spite of its widespread popularity, it is a theory which to date enjoys very little scientific support. . . . Maslow's theory remains very popular among managers and students of organizational behavior, although there are still very few studies that can legitimately confirm it" (pp. 47, 52).

Alderfer's ERG Theory

In the early 1970s, Clayton Alderfer of Yale University proposed an alternative to Maslow's hierarchy of needs. Alderfer's ERG theory posited, as Maslow did, that needs are hierarchically ordered, but Alderfer felt that there are three, rather than five, basic needs categories. According to Alderfer (e.g., Alderfer & Guzzo, 1979), the three human needs levels are:

- 1. Existence Needs:** These are needs that are vital to existence such as food, water, air, shelter, and pay. Existence needs represent a combination of Maslow's physiological and safety needs.
- 2. Relatedness Needs:** These needs involve how people deal with others and include social and interpersonal relationships with significant individuals or groups of others.
- 3. Growth Needs:** Needs in this category are satisfied by productive, creative efforts. People develop a complex awareness of who they are and integrate the many diverse aspects of their personality into a whole (Alderfer & Guzzo, 1979). Growth needs include both Maslow's self-esteem and self-actualization needs. (Gibson et al., 1985; Steers & Porter, 1979).

Although at first glance ERG appears to be a condensed version of Maslow's theory, it differs in that the needs hierarchy is not as inflexible as Maslow's. In ERG theory, existence needs do not have to be satisfied for relatedness and growth needs to be activated, while for Maslow, the satisfaction of a lower need is generally a prerequisite for moving to the next higher need category

(Alderfer, 1989). ERG theory also allows for more than one needs category to be motivating at the same time (Steers & Porter, 1979).

Alderfer offered another key modification of Maslow's model that allows for movement between levels of needs. Maslow's theory is based on a *satisfaction-progression* principle. That is, unsatisfied needs are the most important; the next higher level does not become active if the level below is not satisfied. Alderfer posited a *frustration-regression relationship*. If a higher level need is unsatisfied, needs that are lower may increase in strength (Alderfer, 1989). A person who is unable to satisfy a relatedness need might regress to the existence level where he or she had previously successfully satisfied the need (Landy & Becker, 1987). For example, a man who has been unsuccessful in establishing long-term relationships with women might "lose" himself in a solitary physical activity such as long-distance running, hiking, or weight lifting.

ERG theory generally has been better supported by research findings than Maslow's theory (Zimbardo, 1988). While a graduate student, Alderfer interviewed shop floor employees of a small manufacturing organization. He found that employee comments about their work experiences naturally fell into the three categories that became the core of ERG theory (Rosenfeld, 1986). In a later study, Alderfer and Guzzo (1979) found that children whose parents had completed higher levels of education had greater levels of growth needs. There were also individual differences based on racial and gender variables. Men had higher existence and lower relatedness needs than women. However, men and women had similar growth needs. Alderfer and Guzzo found that blacks had higher existence needs than whites. The authors argued that existence needs would be higher among blacks because blacks tend to be more economically frustrated and the frustration of a need often leads to an increase in its relative importance.

In a study that assessed the validity of both Maslow's and Alderfer's models, Rauschenberger, Schmitt, and Hunter (1980) tested the assumptions that the importance and strength of higher needs are dependent on satisfying lower order needs. Rauschenberger et al. mailed questionnaires to 547 high school students from 11 different high schools in the Midwest. The students' needs were measured three times with an interval of 10 months between measurements. Unlike other studies of needs, which typically have used employees in organizations, the use of students who were going on to college or to jobs allowed for an assessment of whether needs changed over time. The students completed a version of a questionnaire developed by Alderfer to measure needs. The results did not support either Alderfer's or Maslow's hierarchical models. Rather, a high correlation between needs stages was found. People who were high on one need were high on the others and vice versa. Furthermore, there was no evidence that higher needs became more important over time as both models would have predicted. As the authors note, "Need hierarchy theory has been a dominant theory of motivation in industrial and organizational psychology for some time, yet almost all empirical evidence, like that in this study, has disconfirmed the theory" (p. 668).

In sum, even though there is some empirical support for ERG as compared to Maslow's theory, overall the research support for ERG as a universal theory of human needs has not been good (Landy & Becker, 1987).

Murray's Manifest Needs Theory

One of the oldest needs theories is based on the work of Henry Murray. During the 1930s, Murray and colleagues at Harvard University devised a system of needs that was used to classify people. In Murray's view, human personality is composed of a series of internal needs (Spence & Helmreich, 1983). According to Murray's model, needs may be *manifest* or *latent*. Manifest needs are active and related to actual behavior. Latent needs are inhibited, private, and imagined. Latent needs have no direct means of expression but are seen in dreams, and in unguarded moments such as during emotional expressions (Massey, 1981; Steers & Porter, 1979). According to Murray, there are 27 major manifest needs (e.g., achievement, affiliation, nurturance, power). Murray maintained that these various needs emerge in different ways and can be of differing strengths. Unlike Maslow's model, Murray's needs theory is not hierarchically based. A person can be high on one need and low on another at the same time. Furthermore, two or more needs can operate together and be satisfied by the same action (Massey, 1981). For example, a person who studies for a test with a friend can satisfy both the need for achievement and the need for affiliation.

Murray was influenced by Freud's theory of psychoanalysis, which maintained that unconscious processes are important determinants of behavior. Murray believed that needs are largely unconscious and can be measured by projective tests (Spence & Helmreich, 1983). Accordingly, Murray measured human needs through a projective instrument that he developed called the Thematic Apperception Test (TAT). The TAT contains a series of 20 cards with ambiguous pictures on them. Individuals look at the pictures and make up a story describing the plot, characters, and outcome of the event they see in the picture (Massey, 1981). Expert judges rate the stories and measure needs in this fashion.

One study demonstrating that the TAT was responsive to changes in needs was conducted by Atkinson and McClelland (1948, described in Spence, 1983). They deprived three groups of men of food for 1, 4, or 16 hours after which the participants wrote stories in response to TAT pictures. It was found that as hunger increased, the participants' stories focused more on food and food-related themes.

Because of the theory's assumptions of unconscious sources of needs and the decidedly clinical nature of its measurement system, Murray's manifest needs theory is considered more of historical interest than as an accurate portrayal of human motivation. His greatest influence has been in stimulating research on the most influential of his needs categories--the need for achievement.

McClelland and Atkinson's Need for Achievement Theory

The United States is an achievement-oriented society; thus, it is not surprising that so much attention has been devoted to the need for achievement. Influenced by Murray's work, psychologists McClelland and Atkinson proposed a theory based on the need for achievement (n Ach). Individuals who have a high need for achievement set goals for themselves and try to reach them. Such individuals have been found to work harder on an insoluble task than those with lower levels of n Ach (Zimbardo, 1988). High n Ach people set their own realistic performance goals and prefer immediate feedback about their performance (Gibson et al., 1985). They also may show a tendency to be drawn to success and avoid failure (Spence & Helmreich, 1983).

An interesting aspect of the Atkinson/McClelland model is its contention that needs such as n Ach are learned rather than the innate tendencies assumed by other models (Gibson et al., 1985; Spence & Helmreich, 1983). Thus, through training, people can be taught to strive for higher standards and increase their level of n Ach.

Although research on n Ach has been very influential in psychology, the original version of the theory is not currently accepted. For one thing, the use of the TAT to bring out fantasies or imagery related to achievement has been criticized. Compared to other psychological tests, the TAT is difficult to score and has low reliability (Spence & Helmreich, 1983). Many studies of n Ach have not found a relationship between levels of need for achievement and performance (cf. Spence, 1983). Furthermore, the McClelland/Atkinson model of n Ach has had difficulty explaining female achievement motivation, leading to the claim that women do not have as well-developed a sense of achievement as men. Research conducted to explain this apparent gender difference found that women have an enhanced "fear of failure," a conclusion that has also been the target of much criticism (Lipman-Blumen, Handley-Isaksen, & Leavitt, 1983). In sum, men fit the n Ach model better than women, perhaps explaining why much of the research stimulated by the Atkinson/McClelland model was conducted exclusively on males (Spence & Helmreich, 1983).

As with many of the needs theories of the 1950s and 1960s, the need for achievement model has become less popular. Lipman-Blumen et al. (1983) note, "A number of investigators have essentially abandoned the concept of achievement motivation, conceived as a stable disposition to achieve performance excellence, in favor of expectancy or attributional theories" (p. 153).

Herzberg's Two-Factor Theory

Frederick Herzberg's two-factor theory of needs has had wide application to the area of job satisfaction (Herzberg, Mausner, & Snyderman, 1959). The two needs or factors are known variously as hygienes and motivators, dissatisfiers and satisfiers, or extrinsic and intrinsic factors. Herzberg departed from the traditional view that job satisfaction and job dissatisfaction are the end points of a continuous scale. He concluded from his research that hygienes or extrinsic factors such as pay, working conditions, and interpersonal relations on the job operate only to prevent dissatisfaction. On the other hand, motivators or intrinsic factors such as achievement, possibilities for growth, and the work itself operate to produce job satisfaction. Their absence does not produce high levels of dissatisfaction. Thus, the theory proposes that two dimensions are required: high job satisfaction-low job satisfaction and high job dissatisfaction-low job dissatisfaction.

Herzberg's theory has stimulated much research while also being extensively criticized (Gibson et al., 1985). For example, it has been pointed out that the homogeneous sample of accountants and engineers Herzberg used in the development of the theory is hardly typical of the whole range of occupational groups and the wide diversity of individuals within occupational groups. Other researchers believe that the two-factor theory presents a view that is too simplified to be of much use. Dunnette, Campbell, and Hakel (1967, quoted in Gibson et al., 1985) state: "Results show that the Herzberg two-factor theory is a grossly oversimplified portrayal of the mechanism by which job satisfaction or dissatisfaction comes about. Satisfaction or dissatisfaction can reside in the job context, the job content, or both jointly. Moreover, certain job dimensions--notably Achievement, Responsibility, and Recognition--are more important for both satisfaction

and dissatisfaction than certain other job dimensions--notably Working Conditions, Company Policies and Practices, and Security" (pp. 117-118).

Needs Theories: An Evaluation

It is clear that individuals have needs and that these needs are related to how they act. What is not clear, however, is how any single theory of human needs can adequately account for the diverse nature of human motivation. Furthermore, needs theories taken as a whole are only one class of theories of motivation. No single theory of motivation is the "best" or can explain all motivated behavior (Landy & Becker, 1987).

Whereas needs theories dominated motivational psychology during the 1940s and 1950s, they began to lose influence in the 1960s. By 1982, Mitchell's review of theories of motivation had concluded, "Need-based theories of motivation are now not popular. These . . . approaches, represented by people like Maslow, have almost disappeared in the literature" (p. 80). In preparing this review, the authors were struck with how very few present-day researchers subscribe to needs theories.

A number of factors have contributed to the demise of needs theories. For one, the notion of universal hierarchies of needs, though intuitively appealing, has not been supported empirically. Furthermore, needs theories and their postulates of universal hierarchies have often had difficulty accounting for individual differences (Landy & Becker, 1987; Latham, 1988). If everyone is supposed to be driven by the same needs, there is little room for people who don't conform to the model. Related to the individual differences notion is the failure of needs theories to take into account the very real differences that occur over time. It is not always clear what happens to needs hierarchies as a person ages (Wahba & Bridwell, 1973). Perhaps the biggest reason for the demise of needs theories, however, is the change in psychology so dramatic that it has been termed the "cognitive revolution." Beginning in the 1970s and continuing through the present period, the fields of psychology and organizational behavior have come to be greatly influenced by the perspective of cognitive psychology. This cognitive view sees human beings as active information processors who interpret their environments and use these interpretations to guide behavior (Pinder, 1984). Rather than being passive victims of inborn universal needs, cognitive theory sees people playing a much more active role in creating and modifying their behaviors. The contemporary view is that motivation is related to the information people process from their environment, rather than based on universal needs (Landy & Becker, 1987; Mitchell, 1982). As Mitchell notes, "The overwhelming percentage of current papers are concerned with information processing or social-environmental explanations of motivation... rather than need-based approaches" (p. 80).

A brief review of some popular cognitive theories of human motivation will illustrate the cognitive perspective and clarify its differences from needs theories.

Cognitive Theories of Motivation

Equity Theory

Equity theory (Adams, 1963; 1965) is based on the assumptions that individuals want to feel fairly treated, and that individuals perform in exchange for rewards. The theory proposes that individuals are conscious of the ratio of their own perceived inputs (such as effort, skill, and experience) to perceived outcomes (rewards such as pay and recognition) on the job. These perceptions, however, need not be accurate. Individuals compare their "own" ratio to the perceived inputs-to-outcomes ratio of some "other" (e.g., average of other people, oneself at a different time, an "ideal" person). If the own and other ratios seem to be equal, individuals will be satisfied and, presumably, motivated to perform well. If the ratios are not equal (i.e., the person feels either under rewarded or over rewarded relative to the other), they will perceive inequity and will be dissatisfied.

The theory predicts that dissatisfied individuals will seek to attain equity. This might be done by modifying the ratio of inputs to outcomes (e.g., by working slower or asking for a pay raise if under rewarded or by working harder if over rewarded). Individuals may also cognitively distort their perceptions of their own or other's inputs or outcomes, pick a different reference other, or try to change the other's behavior. If they feel powerless to affect the situation, individuals may withdraw through absenteeism or resignation in order to avoid the perceived inequity (Gibson et al., 1985). Research testing equity theory has shown that people are more likely to tolerate over reward than under reward. Thus, dissatisfaction is more likely to occur when *individuals think* themselves under rewarded.

Expectancy Theory

Expectancy theory has been developed and tested largely in work settings and is used to predict how individuals make choices between different courses of action. It was proposed by Vroom (1964), who maintained that individuals are motivated to act when they expect that it will result in desired outcomes (Gibson et al., 1985).

Expectancy theory can be represented in very basic form by the use of three concepts. $E \rightarrow P$ Expectancy refers to the likelihood that Effort will result in a given level of successful Performance. $E \rightarrow P$ Expectancy is represented as a numerical value ranging from 0 to 1. $P \rightarrow O$ Expectancy refers to the likelihood that successful Performance will result in receiving some Outcome. $P \rightarrow O$ Expectancy is also represented by a value from 0 to 1. Valence refers to the attractiveness of the outcome to the individual (V). Valence can range from -1 for a very undesirable outcome to +1 for a very desirable outcome; 0 represents an outcome to which the individual is indifferent. The algebraic values of $E \rightarrow P$, $P \rightarrow O$, and V are multiplied together to arrive at a value for the motivational force to perform (effort). Thus, motivation and effort will be high when the perceived likelihoods of both successful performance and the resultant obtained outcome are high and when that outcome is desirable to the individual. The theory maintains that individuals make comparisons among motivational force values for alternative behavior possibilities in order to choose what to do.

Considerable research has been directed to refining and testing the cognitively-based expectancy theory model, and portions of it have found significant support. On the other hand, it has been criticized for its complexity in that it comprises a sophisticated decision making model that may not be appropriate across a broad range of occupations (cf. Gibson et al., 1985).

Goal Setting

Widespread interest in this cognitive theory of motivation began with the 1968 publication of Edwin A. Locke's paper on goal setting (Locke, 1968). As defined previously, a goal is an object or target for action and represents the results that an individual is working to obtain. Individual behavior is seen primarily as the result of his or her conscious, explicit goals and intentions. Under Locke's formulation of goal setting, individuals are seen as cognitively weighing three attributes of a goal: *specificity*, the clarity or precision of the goal; *difficulty*, the level of performance that is sought; and *intensity*, which applies to how the goal is set or how the individual determines to reach it. *Goal commitment*, the amount of effort used to achieve the goal, is a related attribute that is frequently considered in goal-setting research (Gibson et al., 1985).

The major propositions of Locke's early goal-setting research were that, given goal acceptance by the individual, "hard goals result in a higher level of performance than do easy goals, and specific hard goals result in a higher level of performance than do no goals or a generalized goal of 'do your best'" (Latham & Yukl, 1975 quoted in Steers & Porter, 1979, p. 488). More recently, Locke further refined the predicted goal difficulty/performance relationship to account for limitations in ability to perform. Assuming some commitment, an individual's performance should increase as goal difficulty increases. At the point where a performance ceiling is reached, however, performance will level off and continue at this level.

In sum, the theories presented in this section subscribe to the view that individuals actively process information and make conscious choices about their behavior. While research support for the cognitive models of motivation has been stronger than for needs theories, no one theory is accepted as "right." Rather, as Landy and Becker (1987) note, there has been a movement away from a search for a universal theory of motivation to an acceptance of more limited-domain theories, each accounting for some aspect of the motivation area. While Landy and Becker see needs theories as poor predictors of productivity, they do contend that needs theories are likely to be related to satisfaction. Since this report will be applied to the area of satisfaction with quality of life programs in the Navy, a limited domain needs model may have utility.

A Cognitive Theory of Human Needs

When Landy and Becker (1987) saw a role for needs theory in predicting satisfaction, their conceptualization of needs was far different than the theories reviewed earlier. In line with an overall emphasis on cognitive processes underlying motivation theories, they proposed a cognitive reinterpretation of needs theories. The cognitive model sees humans as active information processors in a world cluttered with information. Because there simply is too much information to process and the human cognitive system is limited, people are "cognitive misers"; they take mental shortcuts that help them organize the world and react to it quickly (Fiske & Taylor, 1991).

According to cognitive theorists, an elemental mental shortcut is related to the tendency to organize, group, and categorize information. Just as papers in a file folder are easier to find than if thrown on a desk, so too these groups or categories of experience called *schemas* aid retention and speed retrieval (Fiske & Taylor, 1991). More formally, a schema is "a cognitive structure that represents one's general knowledge about a given concept or stimulus domain" (p. 14). They may exist for people (e.g., blonds, Jews), roles (e.g., commanding officer, student), or events (e.g., restaurant behavior). In all cases, schemas represent a grouping of related items that allows for simplification, better organization, faster retrieval, and quicker responses (Fiske & Taylor, 1991).

Landy and Becker (1987) have applied this cognitive analysis to needs. Rather than being universal, inborn, "hardwired" tendencies, needs may be thought of as collections of related stimuli grouped around a common theme often related to areas of satisfaction (physiological processes; relationships with others, etc.). This cognitive view argues against a fixed number of needs within people or any hierarchical arrangement based on satisfying lower needs first. As they write,

Cognitive psychologists would be very reluctant to accept the notion that each individual works with the same number of need categories or that these category definitions are unaffected by development or environmental interaction. Researchers in motivation would be well advised to be equally skeptical of the fixed hierarchy notion. On the other hand, cognitive psychologists would accept the proposition that individuals do form clusters of objects in their environments and use those clusters for forming strategies and courses of action" (p. 11).

If the tendency to group information results in "needs schemas" then these categories should be sensitive to environmental influences. These influences, at first glance, would seem to be so diverse (e.g., socioeconomic background, race, education, family life) that there would be little commonality among different people. However, such an analysis neglects powerful forces that may focus the thinking of diverse individuals along similar lines, pose the same challenges to a wide range of people, and result in the formation of needs schemas that share much in common. These powerful forces, much neglected in classical theories of human needs, could be conceived as the *stages of life*, the inevitable challenges posed by the life span. We review a number of life span development models and subsequently integrate them into a cognitive, life span model of human needs.

Life Span Developmental Theories

Although the psychological theories discussed so far provide a framework for understanding human needs, they fail to address how needs change across the life span. Theories in the area of human development lend important insight into how needs change as people mature. A brief overview of developmental theories, focusing on adulthood, is provided to help understand the interrelationships among human needs, motivation, and development.

Developmental psychologists study individuals over long periods of time. Traditionally, theories of development such as Freud's or Piaget's have focused on infancy, childhood, and adolescence to the exclusion of adulthood. The noted psychoanalyst Carl Jung was among the first to challenge Freud's contention that psychological makeup was developed and fixed by adolescence. Jung's notion that development was an ongoing process was a significant change in

the way theorists viewed human behavior, and is currently the accepted viewpoint of most developmental psychologists.

Robert Havighurst, another influential force in developmental theory, pioneered what is now referred to as the life span approach (cf. Havighurst, 1972). He elaborated on the developmental tasks people face throughout life due to physical maturation and societal pressures. Havighurst asserted that certain challenges may occur several times in a person's life. He described three periods, or stages, in adult development. The adult period begins with early adulthood, roughly around the ages of 18 to 30. During this period there are many important developmental tasks: starting an occupation, finding a significant other, marrying, starting a family, and rearing children. The middle years (ages 30-60) present tasks related to reaching competence in one's career, developing meaningful leisure-time activities, adjusting to physiological changes, and assisting the development of one's children. The later years in life (ages 60 and older) present the tasks of adjusting to declining physical health status, retirement and reduced income, and the death of one's spouse and friends. Havighurst's ideas laid the foundation for the understanding of adult development that exists today, and began the process of describing the issues, concerns, and needs of adults.

Erikson's Theory of Psychosocial Development

Erik Erikson's (1963) influential theory of development proposes that personality develops through a series of stages where crises are met, and, if favorably resolved, result in personality growth. Erikson's psychosocial theory covers development from birth to death. He describes eight major tasks or challenges people face as they undergo psychosocial development. Three of the eight stages of development relate to adulthood, starting with early adulthood and culminating with old age. Each stage is characterized by conflicting outcomes of a life crisis specific to that period of time in life.

The task or crisis of the first adulthood stage (sixth stage overall), young adulthood, is *intimacy versus isolation*. Establishing intimacy and making a full commitment to another person is the major crisis that people must deal with in this period. Resolving this issue in a positive manner is demonstrated by one's ability to respect people as they are, and to experience affiliation and love for others. The focus at this time is on interpersonal relationships, finding a significant other, establishing a home, and starting a family. If this task cannot be mastered successfully, isolation results.

Middle adulthood presents a very different issue, characterized in terms of *generativity versus stagnation*. It is the period in which adults play critical roles as productive members of society. It is also the time characterized by concern for others beyond oneself and concern for the welfare of future generations. If people feel that they are contributing through productive and creative activities, generativity will result. Generativity can be achieved through relationships with one's children at home and through mentoring more junior employees at work. If this crisis cannot be successfully dealt with, then stagnation will result due to self-absorption, boredom, and a sense of loss.

Erikson's last stage focuses on the conflict of *ego integrity versus despair*. If earlier crises were handled successfully and people regard their lives as having meaning--that the struggles and

contributions were worthwhile--then wholeness, or ego integrity, will result. If there are doubts about decisions made and feelings of bitterness about life, a sense of despair occurs. Those who feel despair may want to go back to earlier stages in life to try to resolve problems, and they may fear death and wish they could live life again.

Erikson's theory has generated an extensive amount of research and has stood up well over time. Vaillant and Milofsky (1980) found that men from both lower- and middle-class backgrounds seem to progress through the stages in the order that Erikson suggested. Several researchers (e.g., Rosenthal, Gurney, & Moore, 1981) have developed inventories that measure Erikson's stages of development. A number of studies have validated the model in clinical settings and cross-culturally (e.g., Ochse & Plug, 1986).

One of the few studies that has applied Erikson's developmental theory to a military population was that of Garte (1985), who hypothesized that Vietnam veterans experiencing posttraumatic stress disorder (PTSD) had not accomplished the task of the fifth stage of development, *identity versus role confusion*. Because these individuals had not successfully developed an identity, they were more vulnerable to the developmental shock of PTSD.

Levinson's Theory of Adult Development

Perhaps the most influential recent model of adult development has been formulated by Daniel Levinson (Levinson, 1986). Based on his studies of men, Levinson proposed that adult male development is characterized by a series of stages marked by changing goals and rethinking of current behaviors. Levinson's concept of the *life course*--the character of a life from creation to death--is indicative of his wholistic approach to understanding development incorporating physical, psychological, and social factors. The life course suggests a similarity in the developmental pattern across individuals, although Levinson recognizes that each individual's life is unique. His theory explains progression through life in terms of a life cycle sequencing of eras with periods of transition between eras.

The movement into adulthood starts with the *early adult transition* in the late teens or early twenties, where leaving the family and establishing oneself as independent is of paramount concern. The next era, *early adulthood*, follows this transition and lasts into the forties. The issues of concern in adulthood revolve around career and relationships. During this period, the person forms an initial identity centered around occupational choice, along with setting goals for achievement in the future. There are very important choices regarding marriage and family during this period that impact on later development.

The *mid-life transition*, occurring around age 40 to 45, signifies the movement from early adulthood to middle adulthood. This transition into middle adulthood can be experienced as a period of crisis, often referred to as mid-life crisis, when a person realizes that these earlier goals or dreams may not be achievable. Levinson noticed that many men experience a crisis when they realize the difference between what they have actually achieved and what they had hoped to achieve in life. They also experience an uncomfortable feeling of vulnerability due to aging and the development of health problems. Lastly, many people experience the death of their parents during this period of life. The realization of their own mortality causes a change in viewing life from how much time has passed to how much time is left.

Middle adulthood, occurring in the forties to mid-sixties, is the period of time when people often make their most effective contributions to society through politics, diplomacy, and leadership in organizations. There is an emphasis during this developmental period on achieving long range goals and facilitating the growth of others. Levinson noticed that for men there was a shifting of focus from work to family, with an increased need to seek nurturance and comfort.

The last transition occurs around the late fifties to mid-sixties, where physical decline occurs in both oneself and one's age-mates. The major transitions here are retirement and forming a balance between self and society. Anxiety about growing old and being included in the old age category, and a sense of having less power and authority also occur. This transition is followed by the last era, *late adulthood*.

Levinson has supported and expanded his theory based on empirical data, clarifying eras and transition periods as well as examining the validity of the model for women. Additional findings obtained by other researchers (e.g., Herbert, 1990) have supported Levinson's theory. Herbert's findings are significant because he studied the lives of black male entrepreneurs, thus suggesting that Levinson's theory could generalize to members of other racial/ethnic groups. Similar research conducted by Ross (1984) comparing U.S. born males with males who had immigrated from Mexico found support for the general structure of Levinson's theory, although some differences existed in terms of family, mentoring, occupational goals, and the role of the extended family. Levinson's theory was also tested with a sample of men who faced physical danger in their jobs as policemen. Again, support for the general theory existed, although there was less support for the middle adulthood aspect of the model (Fagan & Ayers, 1982).

Gender Differences in Development

Much of the research on adult development has focused on men, leaving some theorists to speculate how development might differ for women. While Erikson is one of the few who based his work on both genders, it is only through efforts by Gilligan (1982) and others that researchers have begun to examine gender differences and how they impact on developmental theory. Gail Sheehy (1977), in her well-known book *Passages*, extended Levinson's theory to women. She identified life patterns for women that involve child rearing, careers in the workplace, and, for a growing number of women, both family and career patterns.

Summary of Developmental Theories

Although the developmental life span theories vary some in the specific issues and terms used, common themes do emerge that lend insight into understanding the needs of people as they move through life. Both Erikson's and Levinson's theories emphasize phases or periods with certain kinds of challenges, tasks, and issues; a mastering of those tasks; and movement into the next phase. Both theories describe how issues and tasks change as individuals move through the development process. Medalie (1984) emphasizes the similarities between Erikson's and Levinson's models, particularly in terms of a consolidation stage in mid-life, and notes the parallels between Erikson's early and middle adult stage and Levinson's transitional stage of the forties.

The developmental theories emphasize the change in people's goals, aspirations, issues, and needs as they move along the life span; the theories also emphasize the common issues and needs

of people at specific periods in their lives. Although these theories do not identify exact ages when events or changes occur, they do suggest that age may be viewed as an index variable, providing insight into potential issues or events that occur in the developmental process. Thus, age is not only an indicator of physiological changes, but also signifies changes in other spheres of life such as cognition, emotions, relationships, and social changes in work and relationships.

These developmental theories fill in some of the gaps that exist in understanding human needs and motivations. Within a life span developmental framework, needs undergo change as people move through the different periods of life. Consideration of the developmental changes and the shifts in focus that are associated with life stages increase our understanding of the needs and motivations of individuals.

In sum, needs theories have attempted to explain the underlying bases of human motivation. Cognitive theories contend that the way information is processed affects which needs are perceived as important and relevant. The developmental theories show how these needs change in importance throughout the life span. By integrating these approaches, a dynamic model for defining and assessing human needs and motivations emerges.

A Cognitive Life Span Model of Needs

The relevance of life span development to theories of human needs is not new, but has not been emphasized by needs theorists. Needs theories have been criticized because they failed to consider the role of development in influencing need strength and importance (Alderfer, 1989; Alderfer & Guzzo, 1979). Yet, exceptions have appeared periodically in the literature (e.g., Veroff, Reuman, & Feld, 1984). In the Hall and Nougaim (1968) study previously discussed, which failed to support Maslow's hierarchy, the authors proposed that a career stages model was a possible alternative to the needs hierarchy. They contend that movement up Maslow's hierarchy is not due to satisfaction of lower needs but rather to aging. As individuals age, new "higher" level needs come to the foreground because new challenges are faced as people enter new life stages. Thus, Porter's (1963) finding that top executives expressed more concern with esteem and self-actualization than did lower level managers could be reinterpreted as being due to the fact that top executives are usually older than lower level managers and closer to the life stage where they try to assess their careers and look toward retirement. With a hierarchical model, these top executives would be seen as having satisfied more lower needs than lower-level managers. In short, the notion of a needs hierarchy may be an artifact--an incorrect inference resulting from ignoring the impact of age (Hall & Nougaim, 1968). Similarly, in the Alderfer and Guzzo (1979) test of ERG theory previously discussed, the authors reported that the strength of ERG needs appears to be affected by an individual's life stage.

Even these infrequent attempts to recognize the role of life span development in needs theories still suffer, we believe, from the questionable assumption that there are some needs that are more or less universal and predetermined. Hence, a believer in Maslow's theory would argue that the five-level hierarchy applies to everyone (although not everyone will self-actualize). Similarly, supporters of ERG theory view existence, relatedness, and growth needs as universal. The cognitive approach challenges this core assumption of needs theories. It maintains that "needs hierarchies are individually defined rather than being universal" (Landy & Becker, 1987, p. 11). We presently postulate that needs are created from within rather than without, and that needs are

abstract categories or schemas by which people organize their perceptions related to physiological and psychological states (Landy & Becker, 1987). While there are no universal need states that inevitably emerge, there is a component of the model: age, which provides the universal influence on the type of needs categories. Everyone ages and everyone faces challenges and opportunities associated with different periods in life. These life stages influence thought processes and the categories or need schemas that are formed. Life stage may also serve to "prime" or activate previously developed need schemas. Once formed and primed, these need schemas guide behavior as things related to and supportive of a schema are rapidly processed and remembered, and things divergent and counter to a schema are often overlooked and not well remembered (cf. Tedeschi, Lindskold, & Rosenfeld, 1985, chapter 2).

This model leads to the following set of assumptions:

1. Needs are categories or schemas that individuals create to simplify, organize, and guide their experience in areas related to satisfaction.
2. Needs may be formed along several dimensions--physiological, psychological, or spiritual. Once formed they guide behavior.
3. Because thinking and information processing are affected by environmental factors, need schemas will be influenced by the social environment of childhood and the present environment.
4. A major environmental/external factor affecting need schemas is life span. The inevitable and predictable challenges and opportunities faced by individuals as they age will serve to create similar need schemas among individuals at that life stage.
5. The more similar the career progression found in an organization the more similar the need schemas formed. Hence, individuals in organizations with structured career ladders will form similar need schemas. The individuals whose needs will most closely coincide are those who have some degree of choice in determining their career ladders.
6. In structured, hierarchical, lock-step organizations, individual (e.g., race, gender, socioeconomic background) and occupational (e.g., rating, specialty) differences will have a greater influence on need schemas early in career progression rather than later. The homogeneity of the career experience likely will reduce the impact of individual differences on need schema formation as people progress.

Applications of the Cognitive Life Span Model to Navy Personnel

The Navy appears to be an ideal setting in which to apply the cognitive life span needs model. For active-duty personnel, the Navy provides similar experiences in terms of entry, training, advancement opportunities, career experiences, living conditions, and leisure activities. Being part of the Navy family is a powerful force in molding need and motivation schemas and a great equalizer in reducing the impact of individual differences.

Specifically, it is proposed that:

1. A cognitive life span model will be more applicable to Navy settings than to less structured organizations. The Navy's unique environment, with similarities in ordering of experiences, relatively lock-step nature of career advancement, and a common set of rules and culture will shape cognitions. Similar cognitions will lead to similar need schemas.
2. Life stage in the Navy will play a more important role than individual differences, especially among senior personnel. The model predicts, for example, that the needs of a black captain and a white captain will likely be more similar than those of a black ensign and a white ensign. Furthermore, the model predicts that the needs of senior enlisted and senior officer members will share more in common than the needs of senior and junior enlisted members or senior and junior officers.
3. The needs of senior Navy personnel are different from junior personnel but may also have important organizational consequences and thus need to be addressed. As with junior personnel, if the needs of senior personnel are not met, there may be adverse impact on crucial Navy outcomes (e.g., performance, readiness, retention).

Recommendations for Applications of the Cognitive Life Span Model to Navy Quality of Life Settings

1. To determine whether a person's quality of life needs are being met, one must first identify what that person's cognitive categories for quality of life needs are. Thus, specific Navy quality of life needs should be determined through empirical research involving standardized interviews or surveys.
2. Needs should be measured at major life stages because universal stage-related changes have influence on the formation of needs schemas. Research is required that would consider Navy personnel by age groups, assess their needs, and compare them to the needs of others from differing age groups. These empirically derived needs would be used to develop a taxonomy of needs tied to Navy life.
3. The empirically derived needs taxonomy should be used as the basis for assessing how well the Navy helps its personnel meet their quality of life needs. The extent to which the Navy supports meeting quality of life needs in different life stages is hypothesized to be related to outcome variables such as retention, readiness, and performance. If research determines, for example, that divergence of individual quality of life needs from those stressed by the Navy's organizational culture is related to separation, then Navy policy makers can take steps to target those areas where divergence exists. The present analysis suggests that rather than seeking global remedies where all personnel are assumed to have a unitary set of needs, the Navy would be best served by addressing those needs that are tied to the various life stages of its personnel.

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